BEFORE THE

FEDERAL COMMUNICATIONS COMMISSION

WASHINGTON, DC 20554

In the Matter of	)	
	)	
Allocation of Spectrum Below	)	
5 GHz Transferred from	)	ET Docket No. 94-32
Federal Government Use	)	
	)	

To: The Commission

REPLY COMMENTS OF MICRON COMMUNICATIONS, INC

Micron Communications, Inc respectfully submit these reply comments in response to the *Notice of Proposed Rule Making* (FCC 94-272, released November 8, 1994) ("*NPRM*") in the above referenced proceeding.

Summary and Introduction

1. Micron Communications, Inc. ("Micron") is a subsidiary of Micron Technology, Inc. of Boise, Idaho created to develop new and innovative communications devices utilizing the semiconductor expertise of its parent. Micron is in the process of developing spread spectrum communications products that are intended to operate under the provisions of section 15.247 of the FCC Rules in the 2400-2483.5 MHz ISM band ("2.4 GHz ISM band"). Adoption of the proposal in the *NPRM* to place the 2402-2417 MHz band out for auction would have disastrous consequences on Micron's investment in new and innovative communications products to use the 2.4 GHz ISM band.

2. NTIA's disregard for the spirit if not the letter of the Budget Reconciliation Act has placed the FCC in an awkward position. As the FCC itself concluded in its report to NTIA on the preliminary reallocation plan:

> we believe that the reallocation of this band [2402-2417 MHz] will provide very little additional value to the public. Any future changes to this band could jeopardize significant private sector investments already made in this band and could result in a loss of benefits to the public and the Federal Government.[1]

NTIA choose to disregard the Commission's recommendation and included the 2402-2417 MHz band within the bands that were to be reallocated immediately to the FCC.[2] Since the Commission was correct in its report to NTIA on the preliminary reallocation plan, putting this band out for auction would only create more problems. The Comments in this docket support the conclusion of Micron that the best course of action with respect to the 2402-2417 MHz band would be to permanently allocate it to its current non-Government users--amateur radio, amateur satellite, and Part 15.

3. Further, Commission action to place this band out for auction could ultimately harm the cause of using auctions for the allocation and assignment of spectrum. Trying to auction off a band that is already used (and will be even more heavily used in the future) without a carefully specified transition plan is a guaranteed source of frustration to both the incumbents (amateurs and users of Part 15 devices) and the "winners" of the auction. The political fallout from such a no-win situation could seriously undermine the existing support for spectrum auctions.

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1 *Report from the Federal Communications Commission to Ronald H. Brown, Secretary U.S. Department of Commerce Regarding the Preliminary Spectrum Reallocation Report.* FCC 94-213, released August 9, 1994, p. 23.

2 This is particularly ironical since Administrator Irving himself felt compelled to write Chairman Hundt stressing the importance of Part 15 devices to the nations economy and urged the FCC to protect their status. Letter of NTIA Administrator Irving to FCC Chairman Hundt, December 12, 1994 (IBM attached a copy of this letter to its Comments in this docket.)

Importance of Spread Spectrum Devices Using The 2.4 GHz ISM Band

4. While the traditional image of Part 15 is for toys, garage door openers and other "do-dads," the FCC's action in opening up three of the ISM bands (902-928, 2400-2483.5, and 5725-5850 MHz) to Part 15 spread spectrum devices and permitting them to have significant power (up to a maximum EIRP of 4 Watt) [47 C.F.R. §15.247 (1993)] has allowed American telecommunications companies to create a wide variety of communications devices many of which have or are becoming crucial to American industry.[3] In addition to the devices discussed in the comments by other companies, Micron is developing electronic identification products for a wide variety of industries that will improve performance and reduce the cost of American industry.

5. Even ignoring the impact of the Automatic Vehicle Monitoring Systems proceeding on the 902-928 MHz band,[4] the continued availability of the 2400-2483.5 MHz band for Part 15 Spread Spectrum operations is crucial. The 902-928 MHz band is simply too narrow to support the high speed data rates that are needed in many applications. The fact that the 902-928 MHz band is designated for ISM use in only Region 2 is also important because it means that Part 15 devices using this band cannot be used in most of Europe and Asia. In contrast, as discussed below, there is substantial international acceptance of using the 2.4 GHz ISM band for unlicensed data communications.

6. The importance of Part 15 devices using this band to the American economy is emphasized in many of the Comments. For example, IBM discusses the "tens

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3 Note that the FCC has twice reaffirmed its commitment to the use of this band for spread spectrum Part 15 devices with 4 Watt EIRP. *See Revision of the Rules Regarding the Operation of Radio Frequency Devices without an Individual License,* First Report and Order, 4 FCC Rcd 3493 (1989) and *Amendment of Parts 2 and 15 of the Rules with Regard to the Operation of Spread Spectrum Systems,* Report and Order, 5 FCC Rcd 4123 (1990).

4 *Amendment of Part 90 of the Commission's Rules to Adopt Regulations For Automatic Vehicle Monitoring Systems,* PR Docket No. 93-61, FCC Rcd 2849 (1993) ("AVM Proceeding").

of millions of dollars" it has invested in the development of its Wireless LAN and the "over 400,000 PTC [portable transaction computers] currently installed" [IBM Comments, p. 6f]. In its Comments, 3Com Corporation presents market estimates for the wireless office equipment. For just this segment of the market the estimates are $100 million in '93, $200 million in '94, $350 million in '95, and by the year 2000 it is estimated to be $750 million to $1 billion dollars (3Com Corporation Comments p. 3).

7. The Comments of IEEE 802 (the standards committee of the U.S. electrical and electronics engineering professional society working on standards for local and metropolitan area networks) makes two important points. First, the Committee is already out for letter ballot on a standard utilizing the 2.4 GHz ISM band that will likely be adopted regardless of FCC action in this docket. Second, over 40 other countries have (or are in the process) of making compatible regulations.[5] The IEEE 802 Comments points out that both American industry in general and American communications equipment manufacturers will suffer if the FCC puts the 2402-2417 MHz band out for auction. American industry will no longer be able to readily use equipment that has been designed to meet this standard and which will become readily available and economical in cost because of the standard's world-wide acceptability. Second, American communications equipment manufacturers will suffer significantly in the export markets if they do not have the advantages of a domestic market to sell in. Since the principal goal of the reallocation provision in the Budget Reconciliation Bill was to promote innovate technologies, using the reallocation to harm Part 15 use of the 2.4 GHz band would be counterproductive and harmful to the true purpose of the provisions.

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5 The Motorola Comments at p. 13 provides a partial list of these countries.

Adoption of the NPRM's Proposal for 2402-2417 MHz Band Would Significantly Harm the Incumbents--Amateur and Part 15

8. The *NPRM* proposes (at ¶9) to auction off the 2402-2417 MHz Band for general Fixed and Mobile services. The *NPRM* further proposes (at ¶10) to allow "technical flexibility in the provision of services" with almost no technical regulations (other than the 47 dB(uV/m) requirement at the service area boundary--and even that restriction can be waived by mutual agreement of the two adjacent licensees). If this were clear spectrum, or there was an agreed upon band clearing/sharing criteria as provided for in the wideband PCS band, this would be an admirable proposal. As the Commission has discused in previous actions, the auction mechanism provides strong incentives for efficient utilization of the spectrum.

9. Unfortunately, these incentives for efficient utilization of the spectrum also provide strong disincentives to share this spectrum with the incumbents--amateur radio and Part 15 devices. Having paid a significant amount for their licenses, the new primary users will have strong incentives to achieve the maximum utilization possible. Since the incumbent uses will represent an obstacle to this maximum utilization, the licensees strong economic incentive will be to discourage incumbent usage. Since the amateur allocation is secondary and the Part 15 usage is unlicensed, there will be no legal barrier to licensees consistently asking the FCC to order the cessation of amateur and Part 15 operations. The actions of Teletrac Corp. in 902-928 MHz are a clear precedent for what will happen. Teletrac has consistently discouraged amateur operations co-channel to its operations and requested that Part 15 devices cease operation.[6] It is important to realize that all of this happened when Teletrac was simply

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6 *See* the record in the AVM Proceeding, *op. cit.*, including the references to the interference complaint filed with the Engineer in Charge of the Dallas District Office. While Teletrac claimed to change its position during the proceeding, the record in that docket clearly establishes that Teletrac's policy was to strongly discourage amateur use of its band and to frequently ask Part 15 users to cease operation.

issued the FCC licenses after paying the standard application fee. Imagine how much stronger will be the actions of a licensee who has paid significant dollars to win an auction. And how much stronger will be its equitable claim to be allowed to enforce its rights under FCC regulations to ask for the cessation of interfering amateur and Part 15 actions!

10. Authority to auction the spectrum has been a long time goal of the FCC which it only recently obtained. In appropriate circumstances, it is a powerful tool to encourage the most efficient utilization of the spectrum and to provide an appropriate return to the tax payer. However, use of this mechanism in inappropriate situations such as 2402-2417 MHz will simply frustrate everyone and could ultimately damage the consensus backing FCC auction authority. Fundamental to the economic theory underlying auctions is a clear definition of property rights. Legally, the FCC rules will provide a clear property right to the auction winners in the 2402-2417 MHz band, since the amateur allocation is secondary and unlicensed Part 15 operates on a non-interference basis. Unfortunately this legally defined property right is neither politically feasible nor in the public interest. As the Budget Reconciliation Bill itself acknowledges, amateur operations provide important public services (especially in emergencies) and are politically popular. As discussed above spread spectrum Part 15 operations in the 2.4 GHz ISM band are becoming increasingly important to the American economy.

11. Auctioning off 2402-2417 MHz will put the FCC in the "Catch 22" of having created powerful economic incentives to minimize the important services provided by the incumbent users. Since this will clearly be unacceptable, the FCC will find itself in continual conflict with the auction winners over how far they can go in

earning a return on their spectrum investment. The FCC should simply not put itself, or its auction powers, into such a hopeless position.[7]

The FCC Should Make the Incumbent Non-Government Users of 2402-2417 MHz-Amateur and Part 15--Primary

12. The best course of action would be to recognize the reality that the current non-Government services using this band are important and leave little or no room for additional non-Government use. Elimination of Government use will not have a significant impact, since government use was mostly in relatively isolated (and frequently remote) areas. While this admittedly does not lend itself to a dramatic press release, this is the best way to handle the "hot potato" that NTIA has tossed to the FCC. Trying to add more non-Government services, especially the proposal in the *NPRM* to auction off the band, will simply replace the existing valuable services with new, less valuable services.

13. The Commission should upgrade amateur radio use from secondary to primary and should add Part 15 use to the U.S. Table of Allocations [47 C.F.R. §2.106]. As the Radio Amateur Satellite Corporation noted in its Comments (p. 5) Part 15 spread spectrum devices and amateurs have successfully shared the spectrum with no known problems. Given the historical willingness of amateurs to cooperate with other spectrum users, we anticipate that there should not be any significant problems.

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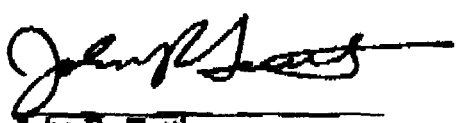
7 While theoretically this could be solved by a more sophisticated (and complicated) definition of property rights that recognized the incumbent services right to continue operation, the complexity af actually implementing this would defeat its public benefits. Crucial to the economic argument for such an arrangement would be the ability of the two sides to negotiate trades of the "property rights." The transaction costs of implementing this with the widely dispersed amateur and Part 15 services would simply overwhelm whatever benefits might theoretically be available from such a course of action.

Conclusion

14. For the reasons discussed above, Micron strongly urges the Commission to not implement the proposal in the *NPRM* to auction off the 2402-2417 MHz band and instead to upgrade the existing allocation of amateur radio to primary and to add Part 15 to the U.S. Table of Allocations.

Respectfully submitted,



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Certificate of Service

I, Paul J. Fox, hereby certify that on this 3rd day of January, 1995, copies of the foregoing "Reply Comments of Micron Communications, Inc." were forwarded by U.S. first class mail, postage prepaid, to the following:

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